CLAIMS

1. A peptide less than 30 amino acids in size, preferably less than 20 amino acids, characterized in that *in vitro*, it specifically binds a type 2A protein phosphatase holoenzyme or one of its subunits.

2. A peptide according to claim 1, characterized in that it is a fragment of a viral, parasitic or cellular protein, said protein binding a type 2A protein phosphatase *in vitro*, or a sequence that is distinguished from the preceding protein fragment by substitution or deletion of amino acids, said distinct sequence nevertheless conserving the properties of binding to the type 2A protein phosphatase or one of its subunits.

3. A peptide according to claim 2, characterized in that said viral, parasitic or cellular protein is selected from one of the following proteins: the t antigen of SV40 or polyoma, the middle t antigen of polyoma, the type B (B, B', B") subunit of PP2A, CXCR2 (chemokine receptor), CK2α, CaMIV, p70S6-kinase, Pak1/Pak3, Tap42/alpha 4, PTPA, Set/I1/I2-PP2A, E4orf4, tau, CD28 or *Vpr*.

4. A peptide according to claim 3, characterized in that it is a fragment of the CD28 protein selected from one of the following peptide sequences:

   a) PRRPGPTRKHY (SEQ ID No: 132); or

   b) a sequence distinguished from the sequence envisaged in a) by substitution or deletion of amino acids, said sequence nevertheless conserving the properties of binding to type 2A protein phosphatase or one of its subunits.

5. A peptide according to claim 3, characterized in that said viral, parasitic or cellular protein is the *Vpr* protein of the HIV virus.

6. A peptide according to claim 5, characterized in that said *Vpr* protein is derived from the HIV-1 or HIV-2 virus.

7. A peptide according to claim 6, characterized in that it is selected from one of the following peptide sequences:

a) RRRRRRRSRGRRRRTY (SEQ ID No: 140); or

b) a sequence distinguished from the sequence envisaged in a) by substitution or deletion of amino acids, said sequence nevertheless conserving the properties of binding to type 2A protein phosphatase or one of its subunits.

8. A peptide according to claim 6, characterized in that it is included in one of the following sequences:

a) VEALIRILQQLLFIHFRI (SEQ ID No: 1);

b) RHSRIGIIQQRRTRNG (SEQ ID No: 2); or

a sequence that is distinguished from SEQ ID No: 1 or SEQ ID No: 2 by substitution or deletion of amino acids, said distinct sequence nevertheless conserving the properties of binding to type 2A protein phosphatase or one of its subunits.

9. A peptide according to claim 8, characterized in that it is the sequence RHSRIGVTRQRRARNG (SEQ ID No: 139).

10. A peptide according to claim 8, characterized in that it consists of the sequence RHSRIG (SEQ ID No: 135).

11. A peptide according to any one of claims 1 to 10, characterized in that its administration induces apoptosis of tumor cells.

12. A peptide according to claim 3, characterized in that said viral, parasitic or cellular protein is the CK2α protein.

13. A peptide according to claim 12, characterized in that said CK2α protein is derived from the *Theileria parva* parasite.

14. A peptide according to claim 12 or claim 13, characterized in that its administration reduces parasitic development.

15. A peptide according to any one of claims 12 to 14, characterized in that it is included in one of the following sequences:

a) RKIGRGKFSEVFEG (SEQ ID No: 3);

b) TVTKDCVIKILKFPVKKKKIKREIKILQNL (SEQ ID No: 4);

c) KILRLIDWGLAEFYHP (SEQ ID No: 5); or

d) a homologous sequence of SEQ ID No: 3, SEQ ID No: 4 or SEQ ID No: 5 derived from *P falciparum* or *leishmania*; or

a sequence deriving from the sequences mentioned above by substitution or deletion of amino acids, said distinct sequence nevertheless conserving the properties of binding to type 2A protein phosphatase or one of its subunits, and in particular the sequence TVTKDKCVIKILKPVKKKKIKREIKILQNL.

16. A peptide according to claim 15, characterized in that it is the peptide RQKRLI (SEQ ID No: 141).

17. A peptide according to one of claims 1 to 16, characterized in that it competitively inhibits interaction of the native protein from which it is derived with a PP2A holoenzyme or one of its subunits.

18. A peptide according one of claims 1 to 17, characterized in that it is coupled to a vector that is capable of transferring said peptide to a eukaryotic cell.

19. A polypeptide, characterized in that it is constituted by a repeat of a peptide according to any one of claims 1 to 13.

20. A polypeptide according to claim 19, characterized in that it is selected from one of the following sequences:

a) $(RHSRIG)_2$ (SEQ ID No: 136);

b) $(RHSRIG)_3$ (SEQ ID No: 137); or

c) $(RQKRLI)_3$ (SEQ ID No: 134).

21. A polynucleotide characterized in that its sequence consists of the sequence encoding a peptide according to any one of claims 1 to 20.

22. A polynucleotide, characterized in that its sequence is selected from one of the following sequences: SEQ ID No: 26, 27, 28, 29 or 30.

23. A polynucleotide, characterized in that it consists of a multimer of polynucleotide according to claim 21 or claim 22.

24. A cellular expression vector, characterized in that it comprises a polynucleotide according to one of claims 21 to 23 and regulatory sequences allowing expression of a peptide according to any one of claims 1 to 20 in a host cell.

25. A purified polyclonal or monoclonal antibody, characterized in that it is capable of specifically binding anyone of the peptides according to one of claims 1 to 20.

26. A pharmaceutical composition comprising a peptide according to one of claims 1 to 20, in combination with a pharmaceutically acceptable vehicle.

27. A pharmaceutical composition comprising an element selected from a polypeptide according to one of claims 21 to 23, an expression vector according to claim 24 or an antibody according to claim 25.

28. A peptide, characterized in that it is selected from one of the following sequences:

- SEQ ID No: 137;
- SEQ ID No: 139;
- SEQ ID No: 140.

29. A peptide, characterized in that it has sequence SEQ ID No: 20.

30. Use of a peptide or polypeptide as defined in any one of claims 1 to 20, 28 or 29, in preparing a drug for treating a viral or parasitic infection.

31. Use of a peptide or polypeptide as defined in any one of claims 5 to 10, 28 or 29, in preparing a drug that can inhibit infection by HIV.

32. Use of a peptide as defined in one of claims 5 to 20 or 28, in preparing a drug that may induce apoptosis of target cells, and in particular tumor cells.

33. Use of a peptide as defined in any one of claims 12 to 16, in preparing a drug that can inhibit parasitic infection.

34. Use of a peptide as defined in any one of claims 12 to 16, in preparing a drug for use in treating malaria.

35. Use of a polynucleotide according to one of claims 21 to 23 or an antibody according to claim 25, in the *in vitro* diagnosis of parasitic or viral diseases.

36. A method for identifying a peptide the sequence of which is derived from a viral, parasitic or cellular protein, said peptide specifically binding a type 2A protein phosphatase holoenzyme or one of its subunits, said method comprising the steps consisting of:

a) depositing, in the form of spots on a support, peptides the sequence of which is derived from a viral, parasitic or cellular protein, each spot corresponding to the deposit of a peptide with a defined sequence;

b) bringing the solid support into contact with a solution containing the protein phosphatase 2A holoenzyme or one of its subunits under conditions that allow the peptides present on the support to bind the holoenzyme or one of its subunits; and

c) identifying on the solid support the peptide to which the protein phosphatase 2A or one of its subunits is bound.

37. A method according to claim 36, characterized in that the size of the peptides deposited in the form of a spot is less than 20 amino acids, preferably less than 15 amino acids.

38. A method according to any one of claims 36 or 39, characterized in that the peptides are deposited on a cellulose membrane.

39. A method according to any one of claims 36 to 40, characterized in that the series of deposited peptide sequences covers the complete sequence of the viral, parasitic or cellular protein from which those sequences are derived.

40. A method for preparing a peptide as defined in any one of claims 1 to 20, 28 or 29, comprising transforming a host cell using a cellular expression vector as defined in claim 24, followed by culturing the transformed host cell and recovering the peptide in the culture medium.